

## Deforestation / Rainforest Lesson Plan



### Classroom Pledge!

Take the classroom pledge at  
[www.act4nature.org.au](http://www.act4nature.org.au) to...

#### **Complete a Postcard Signature Drive in your school.**

Aiming to collect as many names and signatures to send to  
FSANZ to let them know you want the right to choose food  
products that won't destroy orang-utan habitat

### BACKGROUND

#### **What is Deforestation?**

Deforestation refers to the cutting, clearing, and removal of rainforest or related ecosystems into less bio-diverse ecosystems such as pasture, cropland, or plantations (Kricher, 1997).

#### **What are the causes of deforestation?**

- I. Logging
- II. Mining
- III. Oil and gas extraction
- IV. Cattle ranching
- V. Agriculture: Cash crops
- VI. Local, National, and International factors: development, land titles, government subsidies to attract corporations into developing countries, trade agreements (NAFTA, CAFTA), civil wars, debt, lack of resources, and lack of law enforcement.

#### **Largest rainforests worldwide listed in descending order (from largest to smallest).**

1. Amazon basin of South America
2. Congo river basin of Central Africa
3. S.E. Asia
4. New Guinea
5. Madagascar

#### **Facts:**

- Did you know that tropical rainforests, which cover 6-7% of the earth's surface, contain over half of all the plant and animal species in the world!
- Did you know that 57% of all rainforests remaining are located in the Neotropics, with 30% located in Brazil.



## Overview of deforestation around the world:

- Between 1960 and 1990, most of the deforestation occurred globally, with an increasing trend every decade.
- Brazil has the highest annual rate of deforestation today.
- Atlantic coast of Brazil has lost 90-95% of its rainforest.
- Central America has 50% of its rainforests.
- South America has 70% of its rainforests.
- Philippines have lost 90% of its rainforests!
- Madagascar has lost 95% of its rainforests!
- El Salvador has lost 70-85% of its rainforest due to heavy bombing during the civil war 1984-1985.
- Sumatra has 15% of its rainforests left.
- Only 6% of Central Africa's forests are protected by law.

## Statistics on Global Rates of Rainforest Destruction:

2.4 acres (1 hectare) per **second**: equivalent to two football fields

149 acres (60 hectares) per **minute**

214,000 acres (86,000 hectares) per **day**: an area larger than New York City

78 million acres (31 million hectares) per **year**: an area larger than Poland

On average, **137 species become extinct everyday; or 50,000 each year!**

\*If the current rate of deforestation continues, the world's rain forests will vanish within 100 years- causing unknown effects on global climate and eliminating the majority of plant and animal species on the planet\*

## What are the consequences of deforestation?

### Environmental:

1. Extinctions (loss of biodiversity of microbes (bacteria), plants, insects, animals, indigenous peoples, etc).
2. Habitat fragmentation. This disturbs the animals' habitat and may force them to enter habitats which are already occupied. This can pose many problems such as territorial conflicts, homelessness (loss of habitat), lack of food availability, migration disturbances, etc.
3. Soil erosion occurs when trees and plants are removed; the rain water washes the nutrients in the top soil away.
4. Changes in watershed geomorphology.
5. Desertification (dry, hot, arid conditions).
6. Edge effects can change *microclimates* (small climates) which affect *endemic species* (native species which can only live in specific environmental and habitat conditions).
7. Climate change (more carbon dioxide is released into the atmosphere, thus increasing the effects of global warming).
8. Pollution (ground, water and air pollution from oil extraction and mining chemicals).

### Social impacts:

1. Loss of culture (indigenous peoples subsistence living in the rainforest). People who live in the rainforest depend on the natural environment for food, shelter, materials for cooking, clothing, etc. If the forest is cut down or if their environment becomes polluted from oil extraction and mining, they are forced to move or risk starvation and sickness.
2. Displacement of people (loss of farmland, forest resources, etc).
3. Social conflicts and struggles over land and natural resources.
4. Conflicts over racial and ethnic rights.
5. Poisoning from oil and mining waste.
6. Economic uncertainty (price fluctuations and high interest rates on outstanding international loans with The World Bank and International Monetary Fund).

## Rainforest Lesson Plan Ideas

*For use in primary school classrooms*



### Creative writing Project

1. Write a fictional rainforest story from non-fiction information.
2. Write rainforest poetry. Explore different kinds: haiku, prose, rhyme, limerick.
3. Have students pick a rainforest animal. Ask them to write a journal as if they were that animal living in the rainforest. What is its day and life like? Students can work independently or in groups.
4. Have students create a personal book that holds all their rainforest creative writing. Have them decorate and laminate a cover and include drawings to illustrate their writings. Bind with brads, string or metal rings. Students can add to book as new things are written.
5. Spark students' interest by asking them to help brainstorm ideas of why the rain forests may be being destroyed. Next, brainstorm reasons why we would want to save the rain forests and what their uses are. Discuss with the class both of the lists that are generated. Now have students begin work on their save the rain forest posters. They should include illustrations and a strong message of why they think the rain forest should be saved. Once they are finished, the students will present their posters to the class and describe their reason for saving the rain forest.

### Letter Writing Project

Have students write different types of letters (persuasive, business, informal, etc.) regarding the rainforests. For instance, they could write a business letter to the president of a corporation responsible for destructive logging for palm oil plantations in the Indonesia or Malaysia and persuade him or her to switch to sustainable forms of logging or alternative fibers altogether. Have students mail the letter as an act of empowerment in making a difference. (Students' letters are indeed powerful when mailed to corporations. Many items of consumption are targeted to students, and corporations are concerned about their public image and branding.)

### Science Projects

1. Have students pick a rainforest animal. What unique features has it acquired for survival in the rainforest? Camouflage? Toxicity? Speed? Claws? What level on the food-chain is it on? Is it endangered? If so, why? Write a scientific report.
2. Put rainforest fruits (banana, orange, and tomato) and non-rainforest fruits (apple, peach, grapes) each in separate glasses of water. How long does it take for them to decompose? Which ones decompose faster? Why? Since it rains a lot in the rainforest, what qualities help a fruit survive in all that water and humidity?



3. Assign one rainforest area for the class to study (S. America, Africa, South East Asia, Hawaii, New Zealand). Discuss the different layers of the rainforest: the floor, the understory, the canopy and the emergent layer. Have students break into four groups and assign each group one layer. Have them research and discuss with the class all the qualities of their layer. Which plants and animals live there? Which classification are the animals? How much sun does it get? How does their layer interact with the layers above and/or below them? Put up a tall piece of paper and have each group re-create their layer as accurately as possible. Have them draw in the animals found there, the plants, insects and trees, etc. Discuss the people who live in the rainforest from the region each group is studying.
4. Discuss interdependency and the "web of life." Use a ball of yarn to illustrate point. Gather students into a circle. Keeping a hold on the beginning of the thread, have one student throw the ball of yarn across the room to another student. Have that student throw it to another, etc., until a web has been formed. Ask the first student to pull on their piece of yarn. Do the other students feel the pull? Explain how in the web of life, everything is interconnected. Have students explore this issue further, especially as it pertains to the rainforests.
5. Have students research rainforest species that have become extinct. How has this extinction affected the rainforest and life on earth? Make a classroom list of all rainforest animals currently endangered with extinction.

### Maths Project

1. Identify how many acres of rainforest are being destroyed in a day. Have students figure out how many acres are destroyed in a week, month, year. How many acres get destroyed an hour, minute, second? At this rate of destruction, when might all of the rainforests disappear if no one does anything to save them? (Hint: 100 acres of rainforests are being destroyed every minute)

### Art Projects

1. Draw the different animals in the rainforest on big pieces of paper. (Ask your local print shop if they'll donate large, leftover scraps.) Paint them and post them around the room.
2. Create a papier mache rainforest animal. Give the animal a name and write a story to go with it.
3. Cut out patterns of big rainforest shapes. Staple them and stuff them with newspaper for a 3-D effect. Decorate the classroom.
4. Mix paints to come up with as many different shades of green as possible. Use them to paint a picture of the rainforest.
5. Make collages of the rainforest using old magazines and organic matter like twigs, leaves, feathers, even dirt!
6. Make masks of rainforest animals. Use paint, feathers, glitter, etc. and use them in a rainforest play, or wear them in class during special rainforest related activities.



## Deforestation – Take the Quiz!

1. What does deforestation mean? (Hint: The prefix de- means to remove or reduce).
2. Why does deforestation happen? For what purpose(s)?
3. The largest rainforest in the world is located in:
  - a.) The Philippines
  - b.) The Congo Basin in Central Africa
  - c.) Peru
  - d.) The Amazon Basin of South America
4. If 2 football fields are destroyed every second, how many football fields are destroyed in 5 seconds?
5. If 50,000 species become extinct every year, how many will become extinct in half a year?
6. True or false: Rainforests contain over half of all plant and animal species in the world?
7. Fill in the blank: One environmental consequence of deforestation is \_\_\_\_\_. This occurs when heavy rains wash nutrients from the soil.
8. Name two things you can do as a global citizen to decrease deforestation.
9. Biodiversity refers to:
  - a.) The loss of animals and plants
  - b.) A variety or many different kinds of living things
  - c.) When animals lose their living space or habitat
  - d.) An increase in the earth's temperature
10. Fill in the blank: Indigenous people \_\_\_\_\_ in the rainforest. They depend on the forest for their food, clothing, medicine, cooking and building materials.

### ***The answers...***

1. Deforestation refers to the cutting, clearing, and removal of rainforest or related ecosystems into less bio-diverse ecosystems such as pasture, cropland, or plantations.
2. Logging, mining, oil and gas extraction, cattle ranching, agriculture, and International, National, and Local reasons.
3. d.) The Amazon Basin in South America
4. 2 football field = 1 second, then 10 football fields= 5 seconds  
You can set it up as a proportion:  $2/1 = n/5$ ,  $n=10$
5. 1/2 of 50,000 or  $1/2 \times 50,000$  or  $50,000/2 = 25,000$  species
6. True
7. Erosion
8. Buy paper products made from recycled paper and become a vegetarian
9. b.) A variety or many different kinds of living things
10. Live